Book Review

Biological Control Edited by C. B. Huffaker. 1971. Plenum Press, New York and London (227 W. 17th St., N. Y. 10011). 511p.; illus. $19.50, cloth.

This book, comprised of papers presented as a symposium of the combined Ecological Society of America and the American Association for the Advancement of Science in December 1969, contains 20 chapters contributed by 30 specialists. These are prominent workers in the field of biological control and pest management in Europe, Asia, Africa, and North America. As stated by the editor in the preface, "The emphasis is on documented cases of biological control and the use of biological control in developing integrated control programmes around the world."

The book is divided into 4 sections. In addition to pointing out the disastrous consequences that have arisen from the *indiscriminate* widespread use of chemical pesticides and discussing 2 problems compounded by this factor (i.e. cotton insects in Peru and the grape leafhopper in California which have been solved by methods of integrated control), Section I deals with the theory of ecological and technical means of assessing biological control agents. Section II presents several recent outstanding examples of classical biological control. Of particular interest to coleopterists is the "success story" of the chrysomelid, *Agasicles hygrophila,* the first insect successfully introduced for the control of an aquatic weed, and which has given satisfactory control of alligator weed in parts of the southeastern United States. Similarly the curculionids, *Microlarinus lareynii* and *M. lypriformis,* have given useful control of puncture vine in Hawaii and to a lesser extent in California. The cerambycid, *Plagiohammus spinnipennis,* and the hispids, *Octotoma scabripennis* and *Uroplata girardi,* are other beetles which figure prominently in programmes dealing with the biological control of weeds. In papers on biocontrol of insect pests, the classical case of *Rodolia cardinalis* and its successful control of cottony cushion scale is reviewed once more, and mention is made of another coccinellid, *Cycloneda sanguinea,* used to control aphids on glasshouse crops. The general role of coccinellids as agents of natural control receives mention in Section III, "The Unheralded Naturally Occurring Biological Control." Section IV, "Biological Control as a Key Element in the Systems Approach to Pest Control", deals with several instances of successful or developing programmes of integrated control. It points to the conclusions (which have generally gained wide acceptance in recent years) that, while we can't at present do without chemical pesticides, their use should be considered as a last resort rather than being first choice. In its finest sense integrated control should take into account all natural factors, attempt to manipulate or augment them, and, where necessary, superimpose a properly supervised programme of pesticides.

The number of symposia on biological control, integrated control, and related topics is likely to increase over the years. Let us hope that the high standard of contributions achieved in the one under review is maintained.—F. D. Bennett (Commonwealth Institute of Biological Control, Curupe, Trinidad).